

El Dorado County Quarterly Industry Report—Advanced Manufacturing Cluster

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El Dorado County Quarterly Industry Report—Advanced Manufacturing Cluster

Cluster Overview

The Advanced Manufacturing cluster was among eight that were identified as presenting economic development potential in El Dorado County based on economic performance and feedback from local leaders. All nine core activities in this cluster offer at least one of the following benefits to the County: regional linkages, high employment multiplier, commodity imports, occupation match, and base activities.* Combined, these segments produced nearly \$354 million of economic output in the County in 2008.† Figure 1 shows the composition of the Advanced Manufacturing cluster’s core activities based on employment. The Machine Shops, Turned Product, & Screw, Nut, & Bolt Manufacturing and Semiconductor & Other Electronic Component Manufacturing activities are the largest, containing about 250 and 150 jobs, respectively. The remaining segments are significantly smaller with each sector supporting fewer than 100 employees. The Advanced Manufacturing cluster is responsible for close to 1.5 percent of all jobs in the El Dorado County economy based on 2009 data. The two largest segments within the cluster account for 1 percent of the total County employment. The cluster’s combined economic output is about 3 percent of the County total. In addition to the cluster’s nine activities, there are several sectors that are linked to the Advanced Manufacturing cluster as a result of their general supplier relationships with the core activities—these “Linked Sectors” contain close to 3,800 jobs in El Dorado.‡

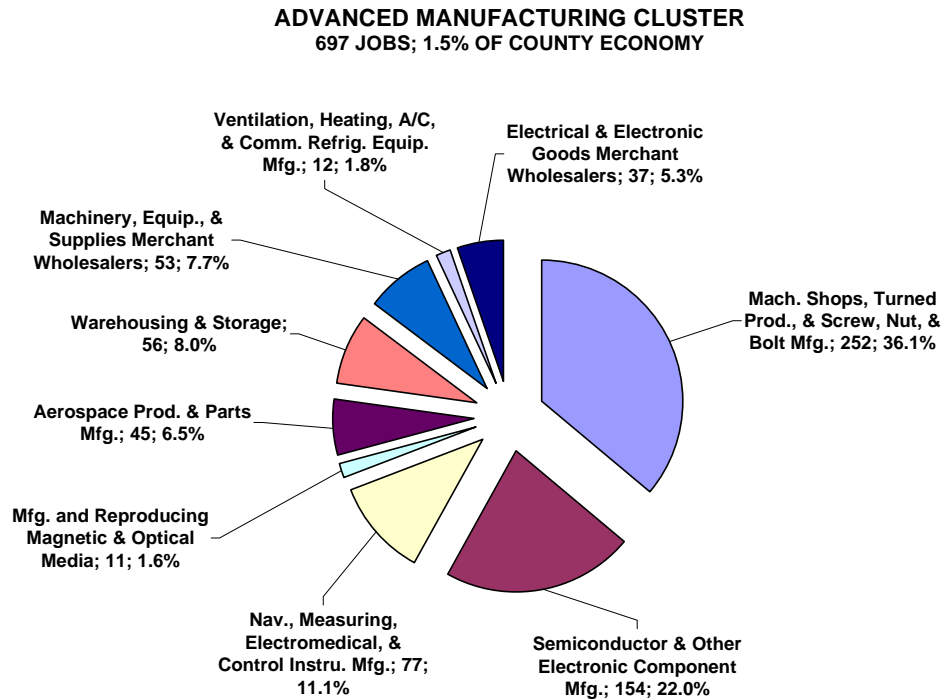
* The cluster activities were established in the June 2010 *El Dorado County Industry-Focused Economic Development Study*, which also discusses several additional benefits associated with the Advanced Manufacturing cluster. *Regional Linkages*—reflects sectors that use goods and services from the largest sectors in El Dorado County and the Sacramento Region as inputs (forward linkages) or acts as suppliers of goods and services to the largest sectors in El Dorado County and the Sacramento Region (backward linkages); *Employment Multiplier*—demonstrates the ripple effect created by direct, indirect (linked suppliers of goods and services), and induced (employee spending) employment within specific sectors; *Commodity Imports*—shows sectors that El Dorado County imports relatively high values of goods and services from and have an existing presence in the Sacramento Region; *Occupation Match*—determines specific sectors that heavily utilized occupations currently held by El Dorado County residents; *Base Activity*—illustrates if the core cluster activity generates net new wealth in the County.

† Data Source: IMPLAN, 2008 Coefficients

‡ Based on analysis of indirect economic impacts using the IMPLAN input-output model (2008 Coefficients), the linked sectors, which also act as suppliers to a wide range of other industry sectors, include Employment Services, Real Estate, Scientific Research and Development Services, Services to Buildings and Dwellings, and Accounting, Tax Preparation, Bookkeeping, and Payroll Services.

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

FIGURE 1
EL DORADO COUNTY 2009 ADVANCED MANUFACTURING
CLUSTER SEGMENTS AND CORE ACTIVITIES



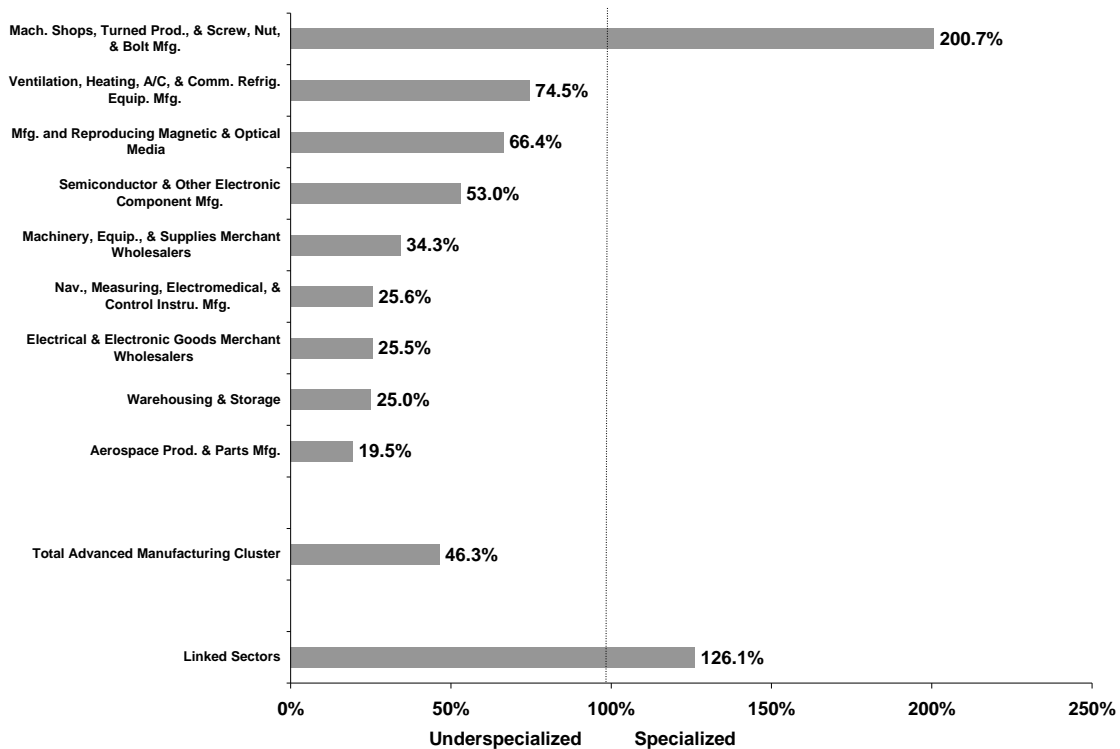
Center for Strategic Economic Research, January 2011

Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

El Dorado County shows a weak level of specialization in the Advanced Manufacturing cluster overall and in most of its core activities. Figure 2 demonstrates that the Advanced Manufacturing cluster is nearly 54 percent less concentrated in El Dorado County compared to the statewide average. The majority of activities are considerably underspecialized; however, the County does support a greater share of total employment than the state overall in the Machine Shops, Turned Product, & Screw, Nut, & Bolt Manufacturing segment and the Linked Sectors.

FIGURE 2
EL DORADO COUNTY 2009 ADVANCED MANUFACTURING CLUSTER SPECIALIZATION



Center for Strategic Economic Research, January 2011

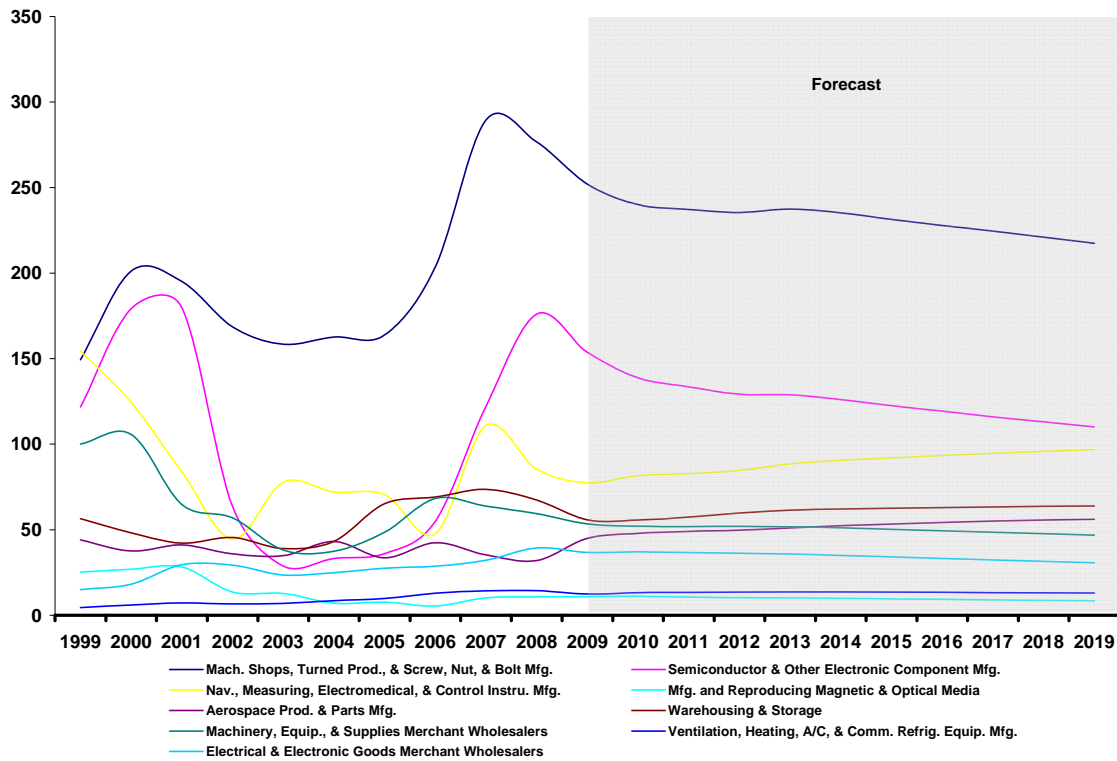
Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

Note: A measure of 100% means that the local area has the same share of total employment as the statewide average.

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

Employment forecasts for El Dorado County show that four of the nine segments in the Advanced Manufacturing cluster, as shown in Figure 3, will see slight employment growth through 2019—the Navigational, Measuring, Electromedical, & Control Instruments Manufacturing; Aerospace Product & Parts Manufacturing; Warehousing & Storage; and Ventilation, Heating, A/C, & Commercial Refrigeration Equipment Manufacturing activities.

FIGURE 3
EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER SEGMENT EMPLOYMENT



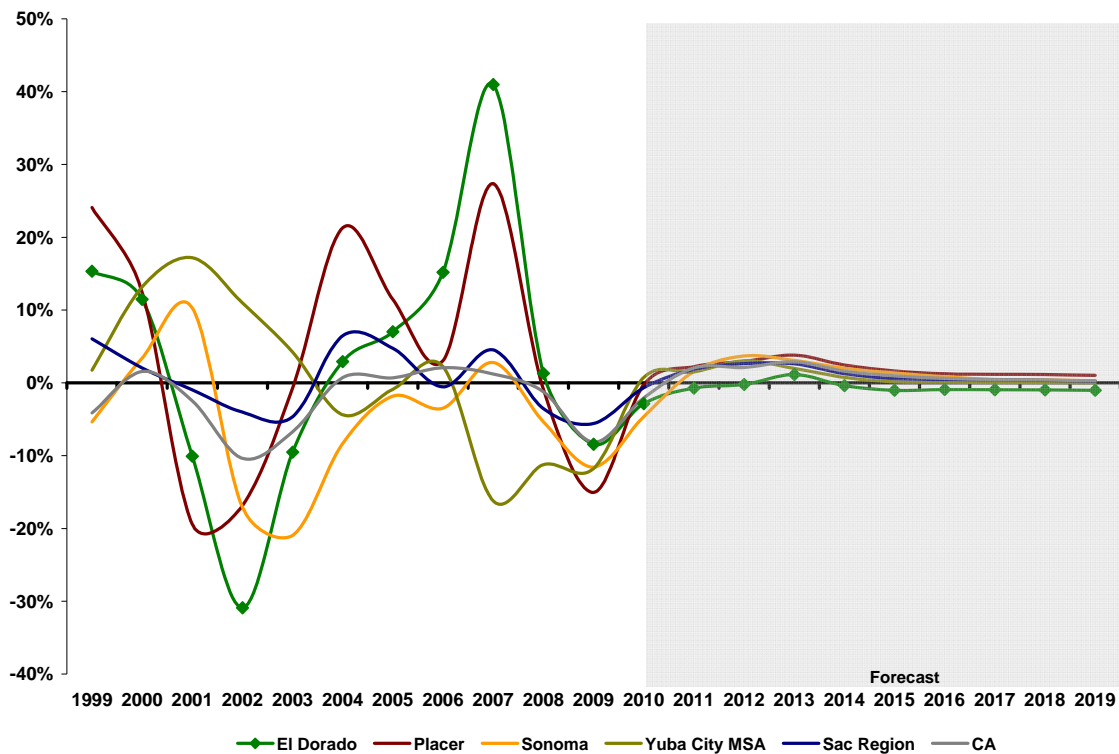
Center for Strategic Economic Research, January 2011

Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

Annual employment growth rates in El Dorado County’s Advanced Manufacturing cluster have been volatile in the past decade, as illustrated in Figure 4. The County added jobs from 1999 to 2000 and again from 2004 to 2009, but lost jobs in the years between. The Semiconductor & Other Electronic Component Manufacturing and Navigational, Measuring, Electromedical, & Control Instruments Manufacturing segments have been the most unstable. Most of the cluster jobs created over the 10-year period were driven by growth in the Semiconductor & Other Electronic Component Manufacturing and Machine Shops, Turned Product, & Screw, Nut, & Bolt Manufacturing activities. El Dorado County’s annual Advanced Manufacturing cluster growth was behind all comparison areas in 2002, but exceeded annual growth of one or more areas in all other analyzed historical years. The Advanced Manufacturing cluster in El Dorado County is forecast to lose jobs on an annual basis through the next 10 years with the exception of 2013. The comparison areas, however, are forecast to see positive annual cluster growth, although minimal, from 2011 through at least 2019.

FIGURE 4
ADVANCED MANUFACTURING CLUSTER ANNUAL EMPLOYMENT GROWTH



Center for Strategic Economic Research, January 2011
 Data Source: CSER estimates based on Moody’s Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

In the past decade (1999 to 2009), employment in El Dorado County’s Advanced Manufacturing cluster increased by 4 percent. This rate of growth was above the average for all other comparison areas except for Placer County which experienced about 12 percent growth in this cluster. El Dorado County’s Advanced Manufacturing cluster

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

grew at about a quarter of the rate of its economy overall. Expectations for the next decade (2009 to 2019) show employment growth dropping off significantly in El Dorado County's Advanced Manufacturing cluster with jobs decreasing by approximately 8 percent while all other benchmark areas are forecast to see growth in this cluster. The series of tables included in the appendix of this report provides additional details of industry performance in the past and upcoming 10 years.

El Dorado County's Advanced Manufacturing cluster is forecast to see a decreased proportion of total employment by the end of the next decade, moving down about 0.2 percentage points to around 1.3 percent of all jobs in the County. The level of specialization is also expected to decrease by almost 12 percent, reaching close to 41 percent in 2019 with all segments except for Machine Shops, Turned Product, & Screw, Nut, & Bolt Manufacturing, remaining below the statewide average composition. The Linked Sectors, although still specialized, is forecast to see its level of specialization to decrease through the next decade (-8 percent), but to a lesser extent than the Advanced Manufacturing cluster.

Figure 5 shows that there are currently close to 200 establishments within the Advanced Manufacturing cluster in El Dorado County with the majority falling within the Machinery, Equipment, & Supplies Merchant Wholesalers segment. The cluster accounts for over 2 percent of all establishments in the County, just slightly over the cluster's proportion of total establishments in Placer County, but a notably smaller share than in Sonoma County and the Yuba City MSA.

FIGURE 5
2010 ADVANCED MANUFACTURING CLUSTER
ESTABLISHMENT COUNTS

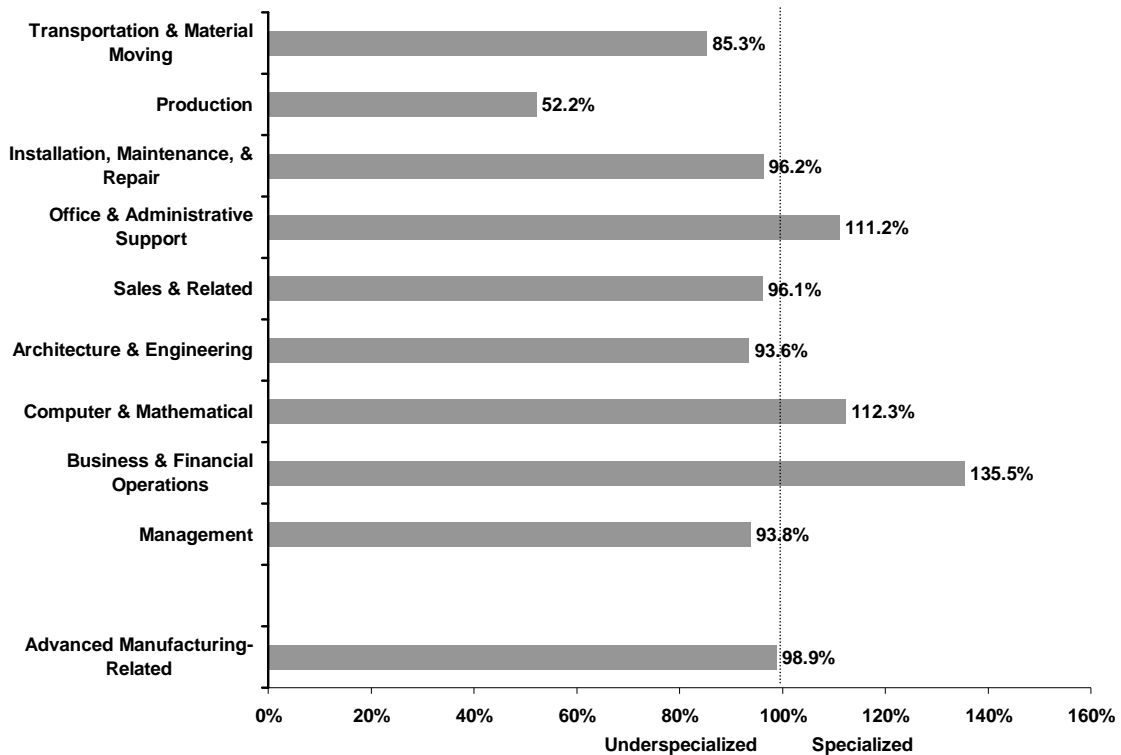
<i>Sector</i>	<i>El Dorado</i>	<i>Placer</i>	<i>Sonoma</i>	<i>Yuba MSA</i>
Counts				
Total Advanced Manufacturing Cluster	193	350	630	164
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	34	27	46	13
Semiconductor & Other Electronic Component Mfg.	6	20	28	0
Nav., Measuring, Electromedical, & Control Instru. Mfg.	5	14	23	1
Mfg. and Reproducing Magnetic & Optical Media	3	4	9	1
Aerospace Prod. & Parts Mfg.	1	3	1	0
Warehousing & Storage	11	20	59	18
Machinery, Equip., & Supplies Merchant Wholesalers	76	161	256	93
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0	13	14	3
Electrical & Electronic Goods Merchant Wholesalers	57	88	194	35
Total Records All Industries	9,068	17,443	27,679	5,991
Composition				
Total Advanced Manufacturing Cluster	2.1%	2.0%	2.3%	2.7%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.4%	0.2%	0.2%	0.2%
Semiconductor & Other Electronic Component Mfg.	0.1%	0.1%	0.1%	0.0%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	0.1%	0.1%	0.1%	0.0%
Mfg. and Reproducing Magnetic & Optical Media	0.0%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.0%	0.0%	0.0%	0.0%
Warehousing & Storage	0.1%	0.1%	0.2%	0.3%
Machinery, Equip., & Supplies Merchant Wholesalers	0.8%	0.9%	0.9%	1.6%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.0%	0.1%	0.1%	0.1%
Electrical & Electronic Goods Merchant Wholesalers	0.6%	0.5%	0.7%	0.6%

Center for Strategic Economic Research, January 2011
Data Source: ReferenceUSA

Manufacturing cluster establishments are concentrated mostly on the west side of El Dorado County with some establishments on the east. The Sacramento Region presents a fairly competitive environment surrounding the western portion of El Dorado County. The establishment distribution map presented in the appendix of this report provides a broader visual depiction of the competitive environment.

Figure 6 shows specialization in the primary occupational categories utilized within the Advanced Manufacturing cluster based on positions employed within establishments in the Sacramento MSA, which is the labor market inclusive of El Dorado County (plus Placer, Sacramento, and Yolo Counties). MSA establishments employ a similar share of Advanced Manufacturing cluster-related occupational categories as the statewide average. Three occupational categories (Office & Administrative Support, Computer & Mathematical, and Business & Financial Operations) demonstrate a strong level of specialization in the MSA while the remaining categories are underspecialized.

FIGURE 6
SACRAMENTO MSA 2009 ESTABLISHMENT OCCUPATIONAL EMPLOYMENT
SPECIALIZATION IN ADVANCED MANUFACTURING CLUSTER-RELATED
CATEGORIES



Center for Strategic Economic Research, January 2011

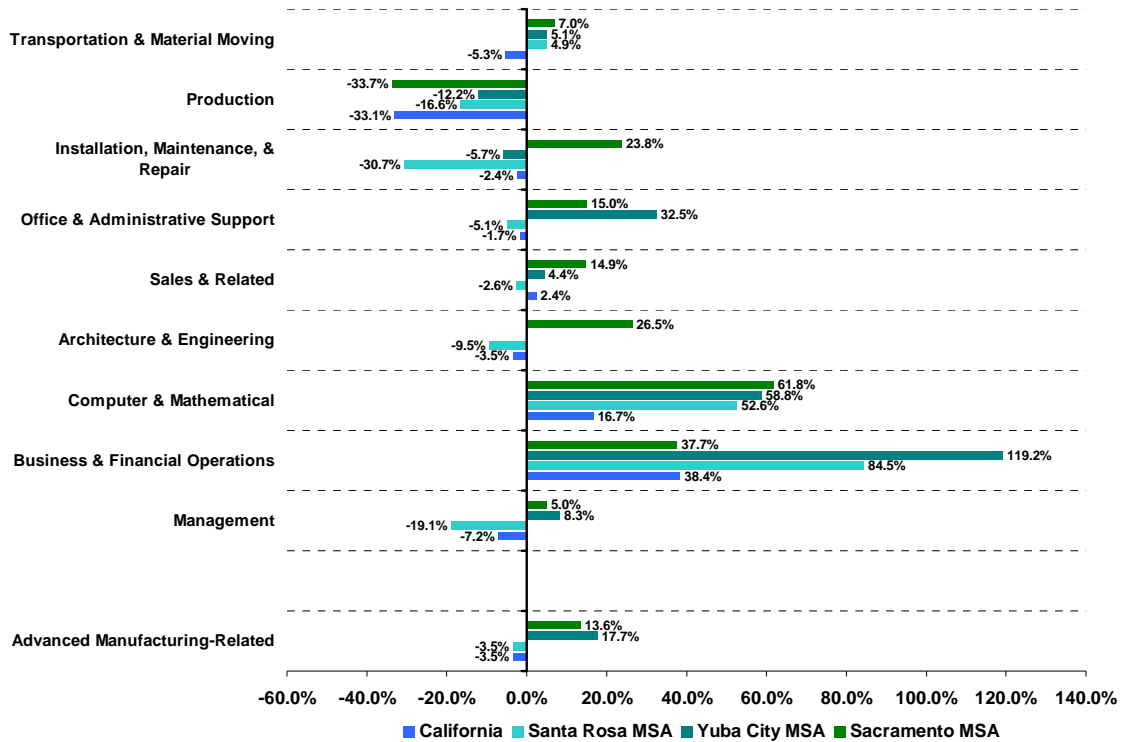
Data Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

Note: A measure of 100% means that the local area has the same share of total employment as the statewide average.

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

The number of positions supported by Sacramento MSA establishments within the Advanced Manufacturing cluster-related occupational categories has increased by about 14 percent in the past 10 years, as shown in Figure 7. Cluster-related occupational employment in the Sacramento MSA outpaced the statewide average and Santa Rosa MSA (Sonoma County), but fell behind the Yuba City MSA. The most robust growth in the Sacramento MSA was in the Computer & Mathematical occupational category while the Production category posted a significant decrease.

FIGURE 7
1999-2009 ESTABLISHMENT OCCUPATIONAL EMPLOYMENT GROWTH IN
ADVANCED MANUFACTURING CLUSTER-RELATED CATEGORIES

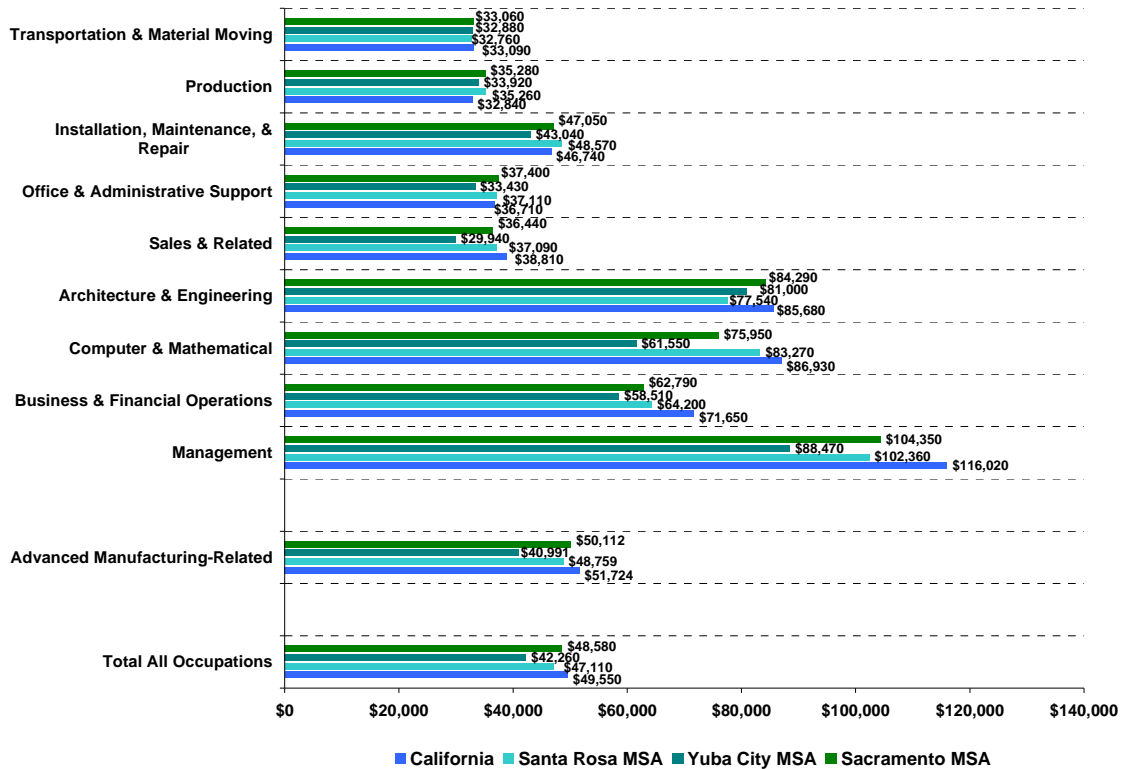


Center for Strategic Economic Research, January 2011
 Data Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

Annual average market wage levels in the Sacramento MSA, shown in Figure 8, are generally slightly below the statewide average (which is typically higher than in the Santa Rosa and Yuba City MSAs). The highest annual wages within the Sacramento MSA’s Advanced Manufacturing cluster-related categories are in the Management category, which tracks above all the benchmark areas except the statewide average. Transportation & Material Moving occupations maintain the lowest annual average wages for the Advanced Manufacturing cluster-related categories in the Sacramento MSA.

FIGURE 8
2009 AVERAGE ANNUAL MARKET WAGES IN ADVANCED MANUFACTURING CLUSTER-RELATED OCCUPATIONAL CATEGORIES



Center for Strategic Economic Research, January 2011
 Data Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER

Figure 9 shows that close to 54,000 residents of El Dorado County are employed within occupations that are heavily utilized by the Advanced Manufacturing cluster. The Sales & Related category contains the greatest number of residents among the cluster-related occupational categories while the fewest number of residents fall within the Architecture & Engineering category. With about 59 percent of residents employed within the cluster-related occupations, El Dorado County's resident composition falls below the majority of the benchmark areas. El Dorado County has a slightly lower composition of this cluster in relation to California's composition, making it slightly underspecialized in terms of resident employment in cluster-related occupations. Only the Management; Computer & Mathematical; Architecture & Engineering; and Sales & Related categories present a similar or greater share of resident employment compared to the statewide average.

FIGURE 9
RESIDENT OCCUPATIONAL EMPLOYMENT,
2006-2008 AVERAGE

<i>Occupational Category</i>	<i>El Dorado</i>	<i>Placer</i>	<i>Sonoma</i>	<i>Sac Region</i>	<i>Yuba MSA</i>	<i>California</i>
Employment						
Advanced Manufacturing-Related	53,576	102,130	133,922	594,528	37,840	10,023,051
Management	11,077	19,895	24,366	101,227	5,201	1,669,259
Business & Financial Operations	4,081	9,333	10,292	55,498	2,088	786,748
Computer & Mathematical	2,689	5,831	4,026	33,925	969	447,322
Architecture & Engineering	2,270	4,292	4,189	22,369	888	377,898
Sales & Related	12,274	23,453	30,154	117,454	7,092	1,965,711
Office & Administrative Support	11,325	23,084	31,992	149,718	9,291	2,348,868
Installation, Maintenance, & Repair	2,610	4,927	6,442	29,975	2,644	521,707
Production	3,838	4,584	12,467	34,950	3,927	957,383
Transportation & Material Moving	3,412	6,731	9,994	49,412	5,740	948,155
Total All Workers	90,156	164,486	233,387	985,170	67,460	16,834,866
Composition						
Advanced Manufacturing-Related	59.4%	62.1%	57.4%	60.3%	56.1%	59.5%
Management	12.3%	12.1%	10.4%	10.3%	7.7%	9.9%
Business & Financial Operations	4.5%	5.7%	4.4%	5.6%	3.1%	4.7%
Computer & Mathematical	3.0%	3.5%	1.7%	3.4%	1.4%	2.7%
Architecture & Engineering	2.5%	2.6%	1.8%	2.3%	1.3%	2.2%
Sales & Related	13.6%	14.3%	12.9%	11.9%	10.5%	11.7%
Office & Administrative Support	12.6%	14.0%	13.7%	15.2%	13.8%	14.0%
Installation, Maintenance, & Repair	2.9%	3.0%	2.8%	3.0%	3.9%	3.1%
Production	4.3%	2.8%	5.3%	3.5%	5.8%	5.7%
Transportation & Material Moving	3.8%	4.1%	4.3%	5.0%	8.5%	5.6%
Specialization						
Advanced Manufacturing-Related	99.8%	104.3%	96.4%	101.4%	94.2%	-
Management	123.9%	122.0%	105.3%	103.6%	77.8%	-
Business & Financial Operations	96.9%	121.4%	94.4%	120.5%	66.2%	-
Computer & Mathematical	112.2%	133.4%	64.9%	129.6%	54.1%	-
Architecture & Engineering	112.2%	116.2%	80.0%	101.2%	58.6%	-
Sales & Related	116.6%	122.1%	110.7%	102.1%	90.0%	-
Office and Administrative Support	90.0%	100.6%	98.2%	108.9%	98.7%	-
Installation, Maintenance, & Repair	93.4%	96.7%	89.1%	98.2%	126.5%	-
Production	74.9%	49.0%	93.9%	62.4%	102.4%	-
Transportation & Material Moving	67.2%	72.7%	76.0%	89.1%	151.1%	-

Center for Strategic Economic Research, January 2011

Data Source: U.S. Census Bureau, 2006-2008 American Community Survey

Economic Development Considerations

The information presented in the Overview section of this report combined with findings from interviews conducted with major employers within each core activity of the Advanced Manufacturing cluster in El Dorado County reveals that there are a few aspects that the County and its partners should take into account when considering how to arrange economic development activities around this cluster. Moving forward, the County could benefit from creating an ongoing process to engage cluster employers to keep track of business trends, success factors, and barriers to growth.

Regulatory Environment

Employment in the Advanced Manufacturing cluster as a whole is forecast to decline through 2019; however, four of the nine cluster activities could see slight employment growth in that time period (the Navigational, Measuring, Electromedical, & Control Instruments Manufacturing; Aerospace Product & Parts Manufacturing; Warehousing & Storage; and Ventilation, Heating, A/C, & Commercial Refrigeration Equipment Manufacturing activities). The Machine Shops, Turned Product, & Screw, Nut, & Bolt Manufacturing cluster activity and the Linked Sectors are currently specialized in El Dorado County's economy and are forecast to remain so, although to a lesser extent over the next decade.

In order to keep this activity and the Linked Sectors specialized and prevent losses in the cluster's other activities, focusing economic development efforts on retention and expansion of establishments in this cluster should be a priority. During the interview process, businesses expressed concern with the amount of regulations and the cost of permits in the County. Specific examples were given including an onerous permitting process, obstacles with property development (e.g. high fees and studies and documentation requirements), and an expensive and difficult process for removing unused public utility easements. The regulatory and permitting issues in the County increase the cost of doing business and the ease at which companies can expand, ultimately potentially hindering future growth in the Advanced Manufacturing cluster.

Industry Requirements

The activities within the Advanced Manufacturing cluster generally demand industrial and flex space buildings. Currently, there is limited availability of such properties within El Dorado County and with the aforementioned regulatory and permitting issues, development of such property will likely be constrained. Desirable uses of existing properties should be considered and attraction and expansion efforts should focus on these spaces. Only a relatively low level of activity within this cluster can be sustained if basic industry requirements such as property space are not addressed.

Supply Chain

The Linked Sectors are specialized and employment is expected to continue to grow; however, the interviews found that businesses were using suppliers of goods and services across the country and across the state more so than in El Dorado County or throughout the Sacramento Region. Economic development potential in these sectors appears

positive considering the economic performance of the existing sectors. Efforts should be put toward attracting suppliers to the County to encourage expansion, attraction, and retention of the Advanced Manufacturing cluster.

Workforce Development

Composition of El Dorado County resident employment in Advanced Manufacturing cluster-related occupations overall is similar to the statewide level. However, there are several cluster activities that suggest a need for workforce development efforts. Resident employment patterns show an underspecialization in Business & Financial Operations; Office & Administrative Support; Installation, Maintenance, & Repair; Production; and Transportation & Material Moving, particularly in the latter two where specialization ranges between around 67 and 75 percent. Business & Financial Operations and Office & Administrative Support are also underspecialized based on employment patterns in the Sacramento MSA overall. This underspecialization demonstrates a need for a more developed workforce. According to the California Manufacturers and Technology Association, California suffers from high drop out rates for high school students and a lack of qualified workers to fill the jobs that will be left open when the baby boomers retire. In order to combat these problems and support the Advanced Manufacturing cluster, linkages with local community colleges and high schools should be established to develop stronger technical education and create a workforce pipeline for cluster employers. Additionally, qualified residents would benefit from services, facilitated by the County, that present and advertise local employment opportunities in the cluster.

Regional CET Participation

Activities related to the Clean Energy Technology (CET) industry have become more prominent in the Sacramento Region in recent years. Some activities within El Dorado County's Advanced Manufacturing cluster, such as Semiconductor & Other Electronic Component Manufacturing and Navigational, Measuring, Electromedical, & Control Instruments Manufacturing, could play a role in this sector. Focusing efforts on exploring opportunities for involvement in the regional CET sector could further expand El Dorado County's Advanced Manufacturing cluster.

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER—APPENDIX

Appendix—Supplementary Information

ADVANCED MANUFACTURING CLUSTER EMPLOYMENT

Area / Sector	1999	2004	2009	2014 F	2019 F	99-09	04-09	09-14 F	09-19 F
El Dorado									
Total Advanced Manufacturing Cluster	671	432	697	676	644	4.0%	61.2%	-3.0%	-7.7%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	149	163	252	235	217	68.7%	54.9%	-6.6%	-13.7%
Semiconductor & Other Electronic Component Mfg.	78	33	154	126	110	26.2%	362.5%	-18.0%	-28.3%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	150	72	77	91	97	-49.8%	7.5%	16.9%	25.1%
Mfg. and Reproducing Magnetic & Optical Media	19	7	11	10	8	-57.2%	51.6%	-8.2%	-21.6%
Aerospace Prod. & Parts Mfg.	58	43	45	52	56	2.0%	4.5%	16.4%	24.8%
Warehousing & Storage	53	43	56	62	64	-1.1%	28.9%	11.5%	14.7%
Machinery, Equip., & Supplies Merchant Wholesalers	92	37	53	51	47	-46.6%	42.3%	-4.3%	-12.2%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	3	8	12	14	13	178.6%	45.8%	10.5%	5.1%
Electrical & Electronic Goods Merchant Wholesalers	14	25	37	35	31	144.9%	47.3%	-4.7%	-16.3%
Linked Sectors	2,865	4,167	3,792	4,059	4,026	32.3%	-9.0%	7.1%	6.2%
Total All Industries	41,581	49,758	48,105	50,464	51,072	15.7%	-3.3%	4.9%	6.2%
Placer									
Total Advanced Manufacturing Cluster	1,935	1,756	2,164	2,416	2,571	11.8%	23.2%	11.7%	18.8%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	235	145	87	110	115	-63.2%	-40.3%	27.5%	32.2%
Semiconductor & Other Electronic Component Mfg.	283	617	959	997	1,014	239.4%	55.3%	4.0%	5.7%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	879	358	311	435	545	-64.7%	-13.3%	40.0%	75.6%
Mfg. and Reproducing Magnetic & Optical Media	52	45	30	28	26	-42.3%	-34.0%	-7.4%	-12.4%
Aerospace Prod. & Parts Mfg.	50	44	81	110	125	62.4%	82.9%	36.0%	54.5%
Warehousing & Storage	71	103	49	67	77	-30.4%	-52.5%	35.3%	55.6%
Machinery, Equip., & Supplies Merchant Wholesalers	197	197	183	192	200	-7.1%	-7.0%	4.7%	9.0%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	29	30	25	35	37	-14.1%	-16.2%	41.1%	45.3%
Electrical & Electronic Goods Merchant Wholesalers	139	215	439	441	432	216.8%	104.3%	0.6%	-1.5%
Linked Sectors	5,483	8,338	6,592	7,490	8,312	20.2%	-20.9%	13.6%	26.1%
Total All Industries	98,630	128,790	125,965	143,091	157,365	27.7%	-2.2%	13.6%	24.9%
Sonoma									
Total Advanced Manufacturing Cluster	7,080	4,851	3,956	4,179	4,322	-44.1%	-18.5%	5.7%	9.2%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	362	193	175	206	209	-51.6%	-9.1%	17.7%	19.4%
Semiconductor & Other Electronic Component Mfg.	543	368	600	599	572	10.5%	62.9%	-0.1%	-4.6%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	4,633	2,573	1,768	1,918	2,101	-61.9%	-31.3%	8.5%	18.9%
Mfg. and Reproducing Magnetic & Optical Media	35	20	16	13	11	-54.5%	-20.6%	-21.3%	-33.2%
Aerospace Prod. & Parts Mfg.	63	61	33	41	46	-47.5%	-46.0%	25.7%	38.9%
Warehousing & Storage	374	379	408	465	496	8.9%	7.4%	14.1%	21.8%
Machinery, Equip., & Supplies Merchant Wholesalers	527	497	476	464	450	-9.6%	-4.3%	-2.5%	-5.5%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	41	96	69	75	70	68.2%	-27.7%	8.0%	0.7%
Electrical & Electronic Goods Merchant Wholesalers	502	663	411	397	367	-18.1%	-38.0%	-3.3%	-10.8%
Linked Sectors	9,544	9,963	10,678	12,165	13,391	11.9%	7.2%	13.9%	25.4%
Total All Industries	316,178	330,581	314,196	337,407	352,115	-0.6%	-5.0%	7.4%	12.1%
Yuba City MSA									
Total Advanced Manufacturing Cluster	736	1,079	717	777	779	-2.5%	-33.5%	8.3%	8.6%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	51	35	52	54	53	0.9%	46.5%	5.6%	2.4%
Semiconductor & Other Electronic Component Mfg.	100	81	70	72	68	-30.2%	-13.7%	3.4%	-2.6%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	302	260	195	234	252	-35.3%	-24.8%	20.0%	28.9%
Mfg. and Reproducing Magnetic & Optical Media	6	4	3	3	2	-50.5%	-19.1%	-2.8%	-14.7%
Aerospace Prod. & Parts Mfg.	13	16	36	36	37	168.4%	122.8%	0.3%	3.5%
Warehousing & Storage	72	83	75	89	92	5.2%	-9.1%	17.5%	22.3%
Machinery, Equip., & Supplies Merchant Wholesalers	170	555	243	244	234	42.9%	-56.3%	0.6%	-3.5%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	10	12	7	7	6	-25.8%	-40.7%	-3.2%	-19.3%
Electrical & Electronic Goods Merchant Wholesalers	12	33	36	37	34	209.2%	10.6%	1.5%	-5.6%
Linked Sectors	1,565	1,906	1,533	1,684	1,687	-2.0%	-19.6%	9.8%	10.1%
Total All Industries	36,777	40,281	39,864	41,891	41,776	8.4%	-1.0%	5.1%	4.8%
Sacramento Region									
Total Advanced Manufacturing Cluster	16,021	15,777	15,647	16,888	17,240	-2.3%	-0.8%	7.9%	10.2%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	829	767	895	894	848	8.0%	16.7%	-0.1%	-5.2%
Semiconductor & Other Electronic Component Mfg.	1,775	1,490	1,474	1,392	1,366	-17.0%	-1.1%	-5.5%	-7.3%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	2,391	1,487	1,533	1,855	2,069	-35.9%	3.0%	21.0%	35.0%
Mfg. and Reproducing Magnetic & Optical Media	388	110	93	91	83	-76.1%	-15.7%	-2.1%	-10.5%
Aerospace Prod. & Parts Mfg.	1,586	2,550	1,768	1,912	1,962	11.5%	-30.7%	8.1%	10.9%
Warehousing & Storage	4,560	5,034	5,698	6,479	6,844	25.0%	13.2%	13.7%	20.1%
Machinery, Equip., & Supplies Merchant Wholesalers	3,034	2,886	2,458	2,487	2,405	-19.0%	-14.8%	1.2%	-2.1%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	463	134	216	234	218	-53.5%	60.3%	8.4%	0.9%
Electrical & Electronic Goods Merchant Wholesalers	995	1,319	1,513	1,543	1,446	52.1%	14.7%	2.0%	-4.4%
Linked Sectors	48,557	52,143	49,733	55,149	56,330	2.4%	-4.6%	10.9%	13.3%
Total All Industries	852,968	967,561	919,854	986,206	1,023,080	7.8%	-4.9%	7.2%	11.2%
California									
Total Advanced Manufacturing Cluster	588,952	491,251	463,585	494,755	508,218	-21.3%	-5.6%	6.7%	9.6%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	44,194	39,935	38,674	41,747	41,191	-12.5%	-3.2%	7.9%	6.5%
Semiconductor & Other Electronic Component Mfg.	131,810	96,752	89,284	89,394	85,859	-32.3%	-7.7%	0.1%	-3.8%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	120,445	106,181	93,294	107,445	118,500	-22.5%	-12.1%	15.2%	27.0%
Mfg. and Reproducing Magnetic & Optical Media	16,846	10,130	5,018	4,048	3,456	-70.2%	-50.5%	-19.3%	-31.1%
Aerospace Prod. & Parts Mfg.	97,364	73,696	71,168	79,148	84,342	-26.9%	-3.4%	11.2%	18.5%
Warehousing & Storage	61,804	60,772	68,712	80,406	87,602	11.2%	13.1%	17.0%	27.5%
Machinery, Equip., & Supplies Merchant Wholesalers	56,988	50,825	47,919	46,055	44,388	-15.9%	-5.7%	-3.9%	-7.4%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	7,628	6,588	5,115	5,531	5,208	-32.9%	-22.4%	8.1%	1.8%
Electrical & Electronic Goods Merchant Wholesalers	51,872	46,373	44,400	40,982	37,672	-14.4%	-4.3%	-7.7%	-15.2%
Linked Sectors	998,808	1,022,759	926,044	1,061,238	1,119,095	-7.3%	-9.5%	14.6%	20.8%
Total All Industries	14,898,202	15,534,306	14,816,916	15,904,544	16,464,643	-0.5%	-4.6%	7.3%	11.1%

Center for Strategic Economic Research, January 2011

Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER—APPENDIX

ADVANCED MANUFACTURING CLUSTER COMPOSITION

Area / Sector	1999	2004	2009	2014 F	2019 F	99-09	04-09	09-14 F	09-19 F
El Dorado									
Total Advanced Manufacturing Cluster	1.6%	0.9%	1.4%	1.3%	1.3%	-0.2%	0.6%	-0.1%	-0.2%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.4%	0.3%	0.5%	0.5%	0.4%	0.2%	0.2%	-0.1%	-0.1%
Semiconductor & Other Electronic Component Mfg.	0.3%	0.1%	0.3%	0.2%	0.2%	0.0%	0.3%	-0.1%	-0.1%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	0.4%	0.1%	0.2%	0.2%	0.2%	-0.2%	0.0%	0.0%	0.0%
Mfg. and Reproducing Magnetic & Optical Media	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Warehousing & Storage	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Machinery, Equip., & Supplies Merchant Wholesalers	0.2%	0.1%	0.1%	0.1%	0.1%	-0.1%	0.0%	0.0%	0.0%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electrical & Electronic Goods Merchant Wholesalers	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Linked Sectors	6.9%	8.4%	7.9%	8.0%	7.9%	1.0%	-0.5%	0.2%	0.0%
Placer									
Total Advanced Manufacturing Cluster	2.0%	1.4%	1.7%	1.7%	1.6%	-0.2%	0.4%	0.0%	-0.1%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.2%	0.1%	0.1%	0.1%	0.1%	-0.2%	0.0%	0.0%	0.0%
Semiconductor & Other Electronic Component Mfg.	0.3%	0.5%	0.8%	0.7%	0.6%	0.5%	0.3%	-0.1%	-0.1%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	0.9%	0.3%	0.2%	0.3%	0.3%	-0.6%	0.0%	0.1%	0.1%
Mfg. and Reproducing Magnetic & Optical Media	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Warehousing & Storage	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Machinery, Equip., & Supplies Merchant Wholesalers	0.2%	0.2%	0.1%	0.1%	0.1%	-0.1%	0.0%	0.0%	0.0%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electrical & Electronic Goods Merchant Wholesalers	0.1%	0.2%	0.3%	0.3%	0.3%	0.2%	0.2%	0.0%	-0.1%
Linked Sectors	5.6%	6.5%	5.2%	5.2%	5.3%	-0.3%	-1.2%	0.0%	0.0%
Sonoma									
Total Advanced Manufacturing Cluster	2.2%	1.5%	1.3%	1.2%	1.2%	-1.0%	-0.2%	0.0%	0.0%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.1%	0.1%	0.1%	0.1%	0.1%	-0.1%	0.0%	0.0%	0.0%
Semiconductor & Other Electronic Component Mfg.	0.2%	0.1%	0.2%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	1.5%	0.8%	0.6%	0.6%	0.6%	-0.9%	-0.2%	0.0%	0.0%
Mfg. and Reproducing Magnetic & Optical Media	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Warehousing & Storage	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Machinery, Equip., & Supplies Merchant Wholesalers	0.2%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electrical & Electronic Goods Merchant Wholesalers	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	-0.1%	0.0%	0.0%
Linked Sectors	3.0%	3.0%	3.4%	3.6%	3.8%	0.4%	0.4%	0.2%	0.4%
Yuba City MSA									
Total Advanced Manufacturing Cluster	2.0%	2.7%	1.8%	1.9%	1.9%	-0.2%	-0.9%	0.1%	0.1%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Semiconductor & Other Electronic Component Mfg.	0.3%	0.2%	0.2%	0.2%	0.2%	-0.1%	0.0%	0.0%	0.0%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	0.8%	0.6%	0.5%	0.6%	0.6%	-0.3%	-0.2%	0.1%	0.1%
Mfg. and Reproducing Magnetic & Optical Media	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Warehousing & Storage	0.2%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%
Machinery, Equip., & Supplies Merchant Wholesalers	0.5%	1.4%	0.6%	0.6%	0.6%	0.1%	-0.8%	1.0%	0.0%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electrical & Electronic Goods Merchant Wholesalers	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Linked Sectors	4.3%	4.7%	3.8%	4.0%	4.0%	-0.4%	-0.9%	0.2%	0.2%
Sacramento Region									
Total Advanced Manufacturing Cluster	1.9%	1.6%	1.7%	1.7%	1.7%	-0.2%	0.1%	0.0%	0.0%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Semiconductor & Other Electronic Component Mfg.	0.2%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	0.3%	0.2%	0.2%	0.2%	0.2%	-0.1%	0.0%	0.0%	0.0%
Mfg. and Reproducing Magnetic & Optical Media	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.2%	0.3%	0.2%	0.2%	0.2%	0.0%	-0.1%	0.0%	0.0%
Warehousing & Storage	0.5%	0.5%	0.6%	0.7%	0.7%	0.1%	0.1%	0.0%	0.0%
Machinery, Equip., & Supplies Merchant Wholesalers	0.4%	0.3%	0.3%	0.3%	0.2%	-0.1%	0.0%	0.0%	0.0%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electrical & Electronic Goods Merchant Wholesalers	0.1%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Linked Sectors	5.7%	5.4%	5.4%	5.6%	5.5%	-0.3%	0.0%	0.2%	0.1%
California									
Total Advanced Manufacturing Cluster	4.0%	3.2%	3.1%	3.1%	3.1%	-0.8%	0.0%	0.0%	0.0%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	0.3%	0.3%	0.3%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%
Semiconductor & Other Electronic Component Mfg.	0.9%	0.6%	0.6%	0.6%	0.5%	-0.3%	0.0%	0.0%	-0.1%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	0.8%	0.7%	0.6%	0.7%	0.7%	-0.2%	-0.1%	0.0%	0.1%
Mfg. and Reproducing Magnetic & Optical Media	0.1%	0.1%	0.0%	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%
Aerospace Prod. & Parts Mfg.	0.7%	0.5%	0.5%	0.5%	0.5%	-0.2%	0.0%	0.0%	0.0%
Warehousing & Storage	0.4%	0.4%	0.5%	0.5%	0.5%	0.0%	0.1%	0.0%	0.1%
Machinery, Equip., & Supplies Merchant Wholesalers	0.4%	0.3%	0.3%	0.3%	0.3%	-0.1%	0.0%	0.0%	-0.1%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electrical & Electronic Goods Merchant Wholesalers	0.3%	0.3%	0.3%	0.3%	0.2%	0.0%	0.0%	0.0%	-0.1%
Linked Sectors	6.7%	6.6%	6.2%	6.7%	6.8%	-0.5%	-0.3%	0.4%	0.5%

Center for Strategic Economic Research, January 2011

Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

EL DORADO COUNTY ADVANCED MANUFACTURING CLUSTER—APPENDIX

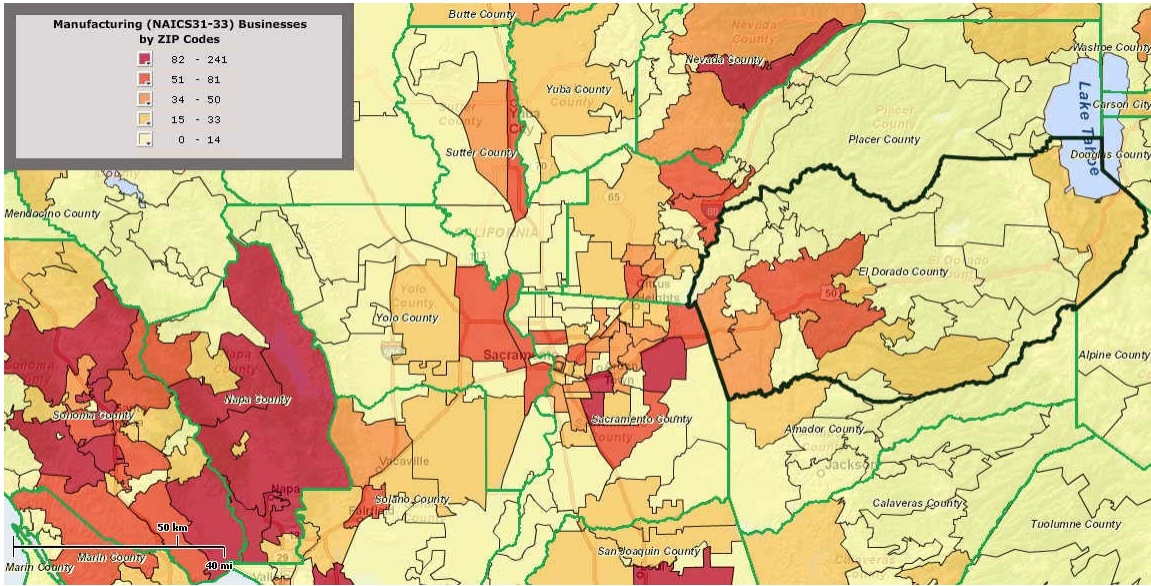
ADVANCED MANUFACTURING CLUSTER SPECIALIZATION

Area / Sector	1999	2004	2009	2014 F	2019 F	99-09	04-09	09-14 F	09-19 F
El Dorado									
Total Advanced Manufacturing Cluster	40.8%	27.5%	46.3%	43.1%	40.8%	13.5%	68.6%	-7.0%	-11.9%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	121.1%	127.2%	200.7%	177.6%	170.2%	65.8%	57.8%	-11.5%	-15.2%
Semiconductor & Other Electronic Component Mfg.	33.1%	10.7%	53.0%	44.4%	41.3%	60.2%	394.5%	-16.2%	-22.0%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	45.9%	21.2%	25.6%	26.6%	26.4%	-44.3%	20.7%	3.8%	3.0%
Mfg. and Reproducing Magnetic & Optical Media	53.7%	22.0%	66.4%	77.3%	79.1%	23.6%	201.9%	16.5%	19.2%
Aerospace Prod. & Parts Mfg.	16.2%	18.2%	19.5%	20.9%	21.5%	20.0%	6.7%	7.1%	10.2%
Warehousing & Storage	32.7%	22.2%	25.0%	24.4%	23.5%	-23.6%	12.5%	-2.5%	-5.9%
Machinery, Equip., & Supplies Merchant Wholesalers	62.9%	23.0%	34.3%	35.0%	34.0%	-45.4%	48.9%	1.9%	-0.8%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	20.9%	40.2%	74.5%	78.0%	80.5%	257.2%	85.3%	4.6%	8.0%
Electrical & Electronic Goods Merchant Wholesalers	10.4%	16.8%	25.5%	26.9%	26.3%	146.0%	51.8%	5.7%	3.3%
Linked Sectors	102.8%	127.2%	126.1%	120.5%	116.0%	22.7%	-0.8%	-4.4%	-8.0%
Placer									
Total Advanced Manufacturing Cluster	49.6%	43.1%	54.9%	54.3%	52.9%	10.6%	27.3%	-1.1%	-3.6%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	80.5%	43.9%	26.3%	29.4%	29.1%	-67.3%	-39.9%	11.6%	10.4%
Semiconductor & Other Electronic Component Mfg.	32.4%	77.0%	126.4%	124.0%	123.6%	290.2%	64.2%	-1.9%	-2.2%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	110.3%	40.7%	39.2%	45.0%	48.1%	-64.5%	-3.8%	14.9%	22.9%
Mfg. and Reproducing Magnetic & Optical Media	46.4%	53.9%	70.0%	76.0%	79.3%	50.8%	29.8%	8.5%	13.2%
Aerospace Prod. & Parts Mfg.	7.7%	7.2%	13.4%	15.5%	15.5%	73.0%	84.7%	15.6%	16.0%
Warehousing & Storage	17.3%	20.5%	8.4%	9.2%	9.1%	-51.3%	-59.0%	9.3%	8.5%
Machinery, Equip., & Supplies Merchant Wholesalers	52.3%	46.8%	45.0%	46.3%	47.1%	-14.0%	-3.8%	3.0%	4.7%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	58.0%	54.9%	57.8%	71.3%	73.4%	-0.3%	5.3%	23.3%	26.9%
Electrical & Electronic Goods Merchant Wholesalers	40.4%	55.9%	116.3%	119.7%	120.1%	188.2%	108.1%	3.0%	3.3%
Linked Sectors	82.9%	98.3%	83.7%	78.5%	77.7%	1.0%	-14.8%	-6.3%	-7.2%
Sonoma									
Total Advanced Manufacturing Cluster	56.6%	46.4%	40.2%	39.8%	39.8%	-29.0%	-13.3%	-1.0%	-1.2%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	38.6%	22.7%	21.4%	23.3%	23.7%	-44.7%	-5.8%	9.0%	11.2%
Semiconductor & Other Electronic Component Mfg.	19.4%	17.9%	31.7%	31.6%	31.2%	63.3%	77.2%	-0.2%	-1.7%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	181.3%	113.9%	89.3%	84.1%	82.9%	-50.7%	-21.5%	-5.8%	-7.2%
Mfg. and Reproducing Magnetic & Optical Media	9.9%	9.4%	15.1%	14.8%	14.6%	52.8%	60.9%	-2.4%	-3.8%
Aerospace Prod. & Parts Mfg.	3.0%	3.9%	2.2%	2.5%	2.5%	-28.1%	-43.9%	13.0%	16.2%
Warehousing & Storage	28.5%	29.3%	28.0%	27.3%	26.5%	-2.0%	-4.7%	-2.5%	-5.3%
Machinery, Equip., & Supplies Merchant Wholesalers	43.6%	46.0%	46.9%	47.5%	47.4%	7.6%	1.9%	1.4%	1.1%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	25.5%	68.5%	64.0%	63.9%	62.8%	151.1%	-6.5%	-0.2%	-1.9%
Electrical & Electronic Goods Merchant Wholesalers	45.6%	67.2%	43.6%	45.7%	45.5%	-4.2%	-35.0%	4.7%	4.3%
Linked Sectors	45.0%	45.8%	54.4%	54.0%	55.9%	20.8%	18.8%	-0.6%	2.9%
Yuba City MSA									
Total Advanced Manufacturing Cluster	50.6%	84.7%	57.5%	59.6%	60.4%	13.7%	-32.1%	3.6%	5.0%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	46.8%	33.9%	49.5%	49.5%	50.4%	5.8%	45.8%	-0.1%	1.9%
Semiconductor & Other Electronic Component Mfg.	30.8%	32.3%	29.1%	30.8%	31.3%	-5.5%	-9.9%	5.5%	7.4%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	101.6%	94.3%	77.8%	82.8%	83.7%	-23.4%	-17.5%	6.5%	7.6%
Mfg. and Reproducing Magnetic & Optical Media	13.9%	13.5%	21.2%	26.1%	27.8%	52.4%	57.4%	23.1%	31.3%
Aerospace Prod. & Parts Mfg.	5.6%	8.4%	18.7%	17.2%	17.3%	236.9%	122.3%	-7.9%	-7.4%
Warehousing & Storage	47.0%	52.7%	40.8%	41.9%	41.5%	-13.2%	-22.5%	2.5%	1.7%
Machinery, Equip., & Supplies Merchant Wholesalers	120.8%	421.4%	188.4%	201.3%	208.1%	55.9%	-55.3%	6.9%	10.5%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	51.1%	70.5%	51.9%	47.4%	43.6%	1.5%	-26.4%	-8.6%	-15.9%
Electrical & Electronic Goods Merchant Wholesalers	9.2%	27.3%	30.4%	34.2%	35.9%	231.4%	11.3%	12.3%	18.0%
Linked Sectors	63.5%	71.9%	61.5%	60.2%	59.4%	-3.1%	-14.4%	-2.1%	-3.4%
Sacramento Region									
Total Advanced Manufacturing Cluster	47.5%	51.6%	54.4%	55.0%	54.6%	14.4%	5.4%	1.3%	0.4%
Mach. Shops, Turned Prod., & Screw, Nut, & Bolt Mfg.	32.8%	30.8%	37.3%	34.5%	33.1%	13.8%	20.9%	-7.3%	-11.1%
Semiconductor & Other Electronic Component Mfg.	23.5%	24.7%	26.6%	25.1%	25.6%	13.1%	7.6%	-5.5%	-3.7%
Nav., Measuring, Electromedical, & Control Instru. Mfg.	34.7%	22.5%	26.5%	27.8%	28.1%	-23.7%	17.7%	5.2%	6.2%
Mfg. and Reproducing Magnetic & Optical Media	40.3%	17.5%	29.8%	36.2%	38.7%	-26.0%	70.7%	21.5%	29.8%
Aerospace Prod. & Parts Mfg.	28.4%	55.6%	40.0%	39.0%	37.4%	40.7%	-28.0%	-2.6%	-6.5%
Warehousing & Storage	128.9%	133.0%	133.6%	130.0%	125.7%	3.7%	0.5%	-2.7%	-5.9%
Machinery, Equip., & Supplies Merchant Wholesalers	93.0%	91.2%	82.6%	87.1%	87.2%	-11.2%	-9.4%	5.4%	5.5%
Ventilation, Heating, A/C, & Comm. Refrig. Equip. Mfg.	106.1%	32.8%	67.9%	68.1%	67.2%	-36.0%	107.2%	0.4%	-1.0%
Electrical & Electronic Goods Merchant Wholesalers	33.5%	45.7%	54.9%	60.7%	61.8%	63.9%	20.1%	10.6%	12.5%
Linked Sectors	84.9%	81.9%	86.5%	83.8%	81.0%	1.9%	5.7%	-3.1%	-6.4%

Center for Strategic Economic Research, January 2011

Data Source: CSER estimates based on Moody's Economy.com; CA Employment Development Department, Employment by Industry Data; and U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages information

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Data Source: ESRI Business Analyst Online